

In the Specification:

Please amend the paragraph at page 1, lines 13 to 20, as follows:

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Figures ~~5 and 6~~ 5(A), 5(B), 6(A) and 6(B) show examples of conventional tools disclosed in Japanese Published Unexamined Utility Model Application Jitsukaihei 3-93004. A hard sintered body indexable insert 51 shown in ~~Fig. 5~~ Figs. 5(A) and 5(B) is obtained by forming a concave hollow at a corner part of a tool substrate 55, thereafter fitting a composite hard sintered body that consists of a hard sintered body 52 and a cemented carbide support 53 thereinto, and brazing them. Cutting edges are formed at the upper and lower surfaces of the hard sintered body indexable insert 51.

Please amend the paragraph at page 1, line 21 to page 2, line 2, as follows:

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Likewise, in a hard sintered body indexable insert 51 shown in ~~Figure 6,~~ Figs. 6(A) and 6(B), a composite hard sintered body that consists of a hard sintered body 52 and a cemented carbide support 53 is brazed to the overall side face of a corner part of a tool substrate 55. As in the case shown in ~~Figure 5,~~ Figs. 5(A) and 5(B), cutting edges are formed at the upper and lower surfaces of the hard sintered body indexable insert 51.

Please amend the paragraph at page 2, lines 3 to 7, as follows:

D3  
The plurality of cutting edges of the upper and lower surfaces of the tip can be simultaneously ground by disposing the composite hard sintered body as shown in ~~Figures 5 and 6,~~ Figs. 5(A), 5(B), 6(A) and 6(B), through one grinding step. Machining costs for each cutting edge of the hard sintered body 52 therefore, can be reduced, and an inexpensive tool can be provided.

Please amend the paragraph at page 2, lines 11 to 15, as follows:

D4  
In other words, cracks and breakage will occur in the hard sintered body 52 if the tool of ~~Figure 5~~ Figs. 5(A) and 5(B) is used under severe conditions. The cracks and breakage run through the hard sintered body 52 with low strength, and reach an unused corner opposite the corner that has been used. As a result, a problem occurs in which the unused corner can no longer be used.

Please amend the paragraph at page 2, lines 16 to 21, as follows:

D5  
Further, in the tool of ~~Figure 6,~~ Figs. 6(A) and 6(B), the composite hard sintered body consisting of the hard sintered body 52 and the cemented carbide support 53 is brazed only in a direction to be sheared with respect to cutting resistance (main cutting force). Therefore, there is the possibility that the composite hard sintered body comes off under severe conditions because of insufficient brazing strength.

Please amend the paragraph at page 2, line 22 to page 3, line 8, as follows:

D4  
Further, other conventional examples of the hard sintered body indexable insert are shown in ~~Figures 3 and 4~~. In ~~Fig. 3~~, Figs. 3(A), 3(B), 4(A) and 4(B). In Figs. 3(A) and 3(B), the hard sintered body 52 is sintered with the cemented carbide support 53 and obtained as a cubic boron nitride composite hard sintered body in a state of being backed with the cemented carbide support 53. This composite hard sintered body is brazed to a seating groove 56 of the tool substrate 55 through a brazing alloy composed chiefly of Ag and Cu. Thereafter, only a ridge of the hard sintered body 52, which serves as a cutting edge, is ground, or is ground simultaneously with a ridge of the tool substrate 55, and thus the hard sintered body indexable insert 51 shown in ~~Fig. 3~~ Figs. 3(A) and 3(B) is obtained.

Please amend the paragraph at page 3, lines 9 to 14, as follows:

D7  
In ~~Figure 4~~, Figs. 4(A) and 4(B), a plurality of composite hard sintered bodies are brazed to the upper surface of the tool substrate 55, and are ground. Thereby, a plurality of cutting edges are simultaneously ground in one step. This makes it possible to reduce machining costs for each cutting edge of the hard sintered body, and makes it possible to provide a tool at low manufacturing cost for the single cutting edge.

Please amend the paragraph at page 3, lines 15 to 21, as follows:

D 8

In order to manufacture a less expensive hard sintered body indexable insert such as the tools shown in ~~Figures 3 and 4~~, Figs. 3(A), 3(B), 4(A) and 4(B), there is a need to further integrate the composite hard sintered body with respect to the single tool substrate 55. Specifically, there is a need to dispose the composite hard sintered body not only at the corner part of the upper surface of the hard sintered body indexable insert 51 but also at the nose part of the lower surface of the hard sintered body indexable insert 51.

Please amend the successive paragraphs at page 7, lines 4 to 15, as follows:

D 9

~~Figure 1 shows~~ Figs. 1(A) and 1(B) show a front view and a sectional view of a hard sintered body indexable insert according to an embodiment of the present invention.

~~Figure 2 shows~~ Figs. 2(A) and 2(B) show a front view and a sectional view of a hard sintered body indexable insert according to another embodiment of the present invention.

~~Figure 3 shows~~ Figs. 3(A) and 3(B) show a front view and a sectional view of a conventional sintered body indexable insert.

~~Figure 4 shows~~ Figs. 4(A) and 4(B) show a front view and a sectional view of another conventional sintered body indexable insert.

9  
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Figure 5 shows Figs. 5(A) and 5(B) show a front view and a sectional view of still another conventional sintered body indexable insert.

Figure 6 shows Figs. 6(A) and 6(B) show a front view and a sectional view of still another conventional sintered body indexable insert.

Please amend the heading at page 7, line 17, as follows:

10  
D  
Detailed Description of the Best Mode for Carrying Out the  
Invention

Please amend the paragraph at page 7, line 18 to page 8 line 9, as follows:

11  
D  
The present inventors have earnestly sought a method for inexpensively manufacturing a hard sintered body indexable insert that contains cubic boron nitride without compromising the performance of a tool. As a result, a hard sintered body indexable insert was manufactured in which a hard sintered body that contains cubic boron nitride by 20 vol % or more is bonded to a seating groove formed at a corner of a tool substrate, and a ridge of the hard sintered body is used as a cutting edge. In ~~Figure 1,~~ Figs. 1 (A) and 1(B), at least one pair of composite hard sintered bodies that each consist of a hard sintered body 2 and a cemented carbide support 3 are disposed on the upper and lower surfaces in a thickness direction of a hard sintered body indexable insert 1. The thickness of a tool substrate 5 between a pair of seating grooves is within the

range of 30% to 90% with respect to the thickness of the hard sintered body indexable insert 1, and the length of the cutting edge of the hard sintered body 2 is within the range of 0.5 mm to 4.0 mm. Said bonding layer 4 of the brazing alloy contains Ti and/or Zr by 0.5 to 65 wt % and further contains Cu.

Please amend the paragraph at page 9, line 23 to page 10 line 4, as follows:

D<sup>12</sup>  
Thus, in order to secure the thickness of the hard sintered body 2 without thinning the part of the tool substrate 5, the structure of ~~Figure 2~~ Figs. 2(A) and 2(B) in which the hard sintered body 2 is bonded directly to the tool substrate 5 through the bonding layer 4 is preferable to the conventional composite hard sintered body backed with the cemented carbide support 3.

Please amend the paragraph at page 10, lines 5 to 14, as follows:

D<sup>13</sup>  
If the cutting-edge length of the hard sintered body exceeds 4.0 mm, the length from the bottom corner of the seating groove 6 to the cutting edge is increased, and ~~an arm~~ the length of the moment become arm becomes long. Accordingly, a large stress caused by the cutting resistance concentrates on the corner of the seating groove 6, thus ~~enhancing~~ increasing the possibility that breakage will occur from this seating groove corner while cutting. If the cutting-edge length is less than 0.5 mm, there will be frequent occurrences of which a cutting-edge length

necessary for cutting cannot be obtained. Therefore, desirably, the cutting-edge length of the hard sintered body 2 is within the range of 0.5 mm to 4.0 mm.

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Please amend the paragraph at page 12, lines 4 to 15, as follows:

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D 14  
A more explanatory description provides that, a paste-like brazing alloy is prepared by mixing a powdery brazing alloy that contains 0.5 to 65 wt % Ti and/or Zr and that further contains Cu with an organic binder. Thereafter, a hard sintered body 2 or a composite hard sintered body is bonded to a part of a seating groove 6 formed in the upper surface of a tool substrate 5 through the paste-like brazing alloy. Herein, any material can be used as the organic binder ~~provides~~ provided that it has moderate viscosity, such as that of glue, of gelatin, or of terpeneol, and provided that a solvent component of the binder evaporates at a relatively low temperature. The "low temperature" mentioned here means temperature less than a solidus line or less than a liquidus line of the brazing alloy component, and indicates the temperature according to which such oxidation as changing the quality of the brazing alloy does not occur.

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15  
b  
Please amend the paragraph at page 13, lines 5 to 13, as follows:

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The hard sintered body indexable insert 1, which is obtained in this way and in which at least the pair of hard sintered bodies 2 or composite hard sintered bodies are temporarily fastened, is brazed by heating in a vacuum or

in an inert gas atmosphere. At this time, since the brazing alloy of the present invention contains Ti and/or Zr, both of which are active metals, ~~[[and]]~~ it has good wettability to the hard sintered body as opposed to the conventional brazing alloy which does not have good wettability. The cemented carbide used as the tool substrate 5 has good wettability to the conventional brazing alloy, and has good wettability to the brazing alloy of the present invention.

Please amend the paragraph at page 15, lines 7 to 11, as follows:

14  
D As shown in ~~Figure 1~~, Figs. 1(A) and 1(B), a recess 7 is provided at the brazing part of the composite hard sintered body of the tool substrate 5. This is effective in the fact that the composite hard sintered body and the tool substrate can be brazed with excellent dimensional accuracy. The same applies to the hard sintered body shown in ~~Figure 2~~. Figs. 2(A) and 2(B).

Please amend the paragraph at page 15, line 19 to page 16 line 3, as follows:

(Embodiment 1)

17  
D The hard sintered body indexable insert 1 shown in ~~Figure 2~~ Figs. 2(A) and 2(B) was made. It was made for ~~a purpose to examine an~~ it's the purpose of examining an effect on cutting performance and on durability caused by the thickness of the part of the tool substrate 5 between a pair of seating grooves 6. The pair of upper and lower

seating grooves 6 used to bond the hard sintered body 2 was provided at each corner of the tool ~~substrate corner,~~ substrate, and the depth of the seating groove 6 was variously changed. These corresponding samples are shown in Table I.

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**[RESPONSE CONTINUES ON NEXT PAGE]**